

WHAT IS CLAIMED IS:

1. An interactive system for managing customer utility loads, comprising:

a plurality of utility meters for monitoring the distribution of a product at respective said customer utility loads;

a web-based application that offers a plurality of services to a user, wherein selected of said services provide data corresponding to product distribution at selected of said customer utility loads;

10 a control network linked to said web-based application for managing the interaction of selected elements of said system and for storing various system-related data; and

15 a communications network linking said control network to said utility meters and for relaying communications signals.

2. An interactive system as in claim 1, wherein said plurality of services comprises a read service to remotely read metered data corresponding to selected of said customer utility loads and subsequently display data reports corresponding to said metered data.

3. An interactive system as in claim 2, wherein said plurality of services further comprises a usage notification service wherein a user inputs threshold amounts of utility consumption, utility demand, or combinations thereof, and receives a notification when selected of said customer utility loads exceeds said threshold amounts.

4. An interactive system as in claim 3, wherein said plurality of services further comprises a connection service for effecting the connection status of said

customer utility load, wherein said connection status may
5 be characterized as either connected or disconnected.

5. An interactive system as in claim 4, wherein
access to said web-based application is effected upon a
user inputting an identification element and a
corresponding password element.

6. An interactive system as in claim 1, wherein said
plurality of services comprises a connection service for
effecting the connection status of said customer utility
load, wherein said connection status may be characterized
5 as either connected or disconnected.

7. An interactive system as in claim 6, wherein said
connection status is established by a switch element
located on the load side of each said utility meter.

8. An interactive system as in claim 7, wherein said
switch element is a circuit breaker.

9. An interactive system as in claim 8, wherein said
circuit breaker is capable of limiting currents up to about
200 Amperes.

10. An interactive system as in claim 1, wherein each
of said utility meters comprises a communications component
capable of transmitting and receiving radio frequency (RF)
signals among said communications network.

11. An interactive system as in claim 1, wherein said
product distribution comprises utility commodities selected
from the group comprising water, gas, and electricity.

12. An interactive utility system for monitoring and
5 effecting the distribution of a utility product to a
plurality of utility loads, said interactive system
comprising:

a plurality of utility meters provided in conjunction
with an arrangement for measuring or distributing said

10 utility product, wherein each of said utility meters incorporates a radio frequency (RF) communications device for relaying selected utility information;

a web-based platform providing selectable services to a user, wherein said services comprise:

15 (i) gathering and displaying data that corresponds to information gathered by selected of said utility meters; and

(ii) disconnecting or reconnecting product flow to selected of said utility loads;

20 a communications network established among each of said utility meters and a system controller, for passing signaled information between selected of said utility meters and said system controller, and through any intermediate communication nodes thereof; and

25 a control network for managing the operation of said interactive utility system, wherein said control network is linked to said web-based platform.

13. An interactive utility system as in claim 12, wherein said selectable services comprise a consumption usage notification service wherein a user inputs a threshold amount of utility consumption and receives a 5 notification when the utility usage amount of selected of said customer utility loads exceeds said threshold amount.

14. An interactive utility system as in claim 12, wherein said selectable services comprise an utility demand notification service wherein a user inputs a threshold amount of utility demand and receives a notification when 5 the utility demand of selected of said customer utility loads exceeds said threshold amount.

15. An interactive utility system as in claim 12,

wherein access to said web-based platform is effected upon a user inputting an identification element and a corresponding password element.

16. An interactive utility system as in claim 12, wherein said control network comprises databases for storing meter data corresponding to selected of said customer utility loads and for storing system information 5 for said web-based platform.

17. An interactive utility system as in claim 12, wherein said utility product corresponds to electricity.

18. An interactive utility system as in claim 17, wherein said selectable service of disconnecting or reconnecting electricity flow can correspond to either physically disconnecting or reconnecting or virtually 5 disconnecting or reconnecting the flow of electricity.

19. An interactive utility system as in claim 18, wherein said process of physically disconnecting or reconnecting said flow of electricity is effected by remotely toggling a connection element.

20. An interactive utility system as in claim 19, wherein said connection element corresponds to a circuit breaker capable of limiting currents up to about 200 Amperes.

21. A remote system for disconnecting and reconnecting the flow of electricity at a customer utility load, comprising:

a metering system corresponding to said customer 5 utility load for monitoring the status of and providing consumption data corresponding to said utility load;

a web-based application for signaling the desired status of electricity flow, wherein said status is characterized as either connected or disconnected;

10 a connection element provided in conjunction with said
metering system for toggling between connected or
disconnected status of said electricity flow; and

15 a radio frequency (RF) communications device provided
in conjunction with said metering system for relaying
information between said metering system and said web-based
application.

22. A remote system as in claim 21, wherein said web-based application comprises a disconnection service for establishing a usage threshold amount that corresponds to a limit for the amount of energy consumption at a selected customer utility load, for monitoring the amount of energy usage at said selected customer utility load, and for toggling said connection element to disconnected status when the amount of energy consumption at selected said customer utility load exceeds said usage threshold amount.

23. A remote system as in claim 21, wherein said web-based application comprises a reconnection service for requesting connection of a selected customer utility load, for remotely toggling said connection element to connected status, and for thereafter performing a series of rapid data reads to determine if said selected customer utility load consumes an excessive amount of energy.

24. A remote system as in claim 23, wherein said connection element is remotely toggled to disconnected status if any data read of said series of rapid data reads indicates an excessive amount of energy consumption at said selected customer utility load.

25. A remote system as in claim 21, wherein said metering system comprises a solid-state electronic utility meter for measuring the flow of electricity at said customer utility load.

26. A remote system as in claim 22, wherein said web-based application further comprises a remote read service for remotely collecting meter data after said connection element is toggled to disconnected status, thus ensuring
5 that the connection element is indeed in disconnected status.

27. A remote system as in claim 21, wherein access to said web-based application is effected upon a user entering an identification element and a corresponding password element.

28. A remote system as in claim 21, wherein said connection element comprises a circuit breaker capable of limiting currents up to about 200 Amperes.

29. A remote system as in claim 21, further comprising a control network linked to said web-based application and to said metering system for managing the operation of and communication among selected components of
5 said remote system and for storing various system-related data.

30. A remote system as in claim 21, wherein said web-based application comprises a disconnection service for establishing a usage threshold amount that corresponds to a limit for the amount of demand energy at a selected
5 customer utility load, for monitoring the amount of energy demand at said selected customer utility load, and for toggling said connection element to disconnected status when the amount of demand energy at selected said customer utility load exceeds said usage threshold amount.

31. A web-based utility application offering selectable services for a customer utility load, said selectable services comprising:

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a read service to remotely read metered data
5 corresponding to said customer utility load and subsequently display reports corresponding to said metered data;

a usage notification service for inputting a threshold amount of utility consumption or utility demand and
10 receiving a notification when said customer utility load usage exceeds said threshold amount; and

a security service for inputting an identification element and a corresponding password element to gain access to said web-based utility application.

32. A web-based utility application as in claim 31 wherein said customer utility load corresponds to the distribution of electrical energy to a predetermined location.

33. A web-based utility application as in claim 31, wherein notification provided in accordance with said usage notification service comprises an electronically mailed message (e-mail) expressing that said threshold amount of
5 utility consumption has been exceeded.

34. A web-based utility application as in claim 32, further comprising at least one database for storing selected electrical load and consumption data and other information related to said utility application.

35. A web-based utility application as in claim 31, wherein said read service is performed at periodic intervals to ensure proper operation of meter hardware provided at said customer utility load.

36. A web-based utility application as in claim 31, further including a connection service for effecting the connection status of said customer utility load, wherein

said connection status may be characterized as either
5 connected or disconnected.

37. A web-based utility application as in claim 35 wherein said customer utility load corresponds to the distribution of electrical energy to a predetermined location.

38. A web-based utility application as in claim 35, wherein notification provided in accordance with said usage notification service comprises an electronically mailed message (e-mail) expressing that said threshold amount of
5 utility consumption has been exceeded.

39. A web-based utility application as in claim 37, further comprising at least one database for storing selected electrical load and consumption data and other information related to said utility application.

40. A web-based utility application as in claim 37, wherein said read service is performed in periodic intervals to said customer utility load to ensure proper operation of meter hardware provided at said customer
5 utility location.

41. A method for effecting the connection status of a customer utility load via a web-based utility application, said method comprising the steps:

providing user-inputted access information to said
5 web-based application;

performing a first remote read of a utility meter associated with said customer utility load to verify initial connection status of said customer utility load;

transmitting a connection signal from a main control
10 station to an RF receiver provided at said utility meter; and

performing a second remote read of said utility meter to verify final connection status of said customer utility load.

42. A method for effecting the connection status of a customer utility load as in claim 41, wherein said step of transmitting a connection signal implements an additional step of virtually connecting said customer utility load.

43. A method for effecting the connection status of a customer utility load as in claim 41, wherein said step of transmitting a connection signal implements an additional step of virtually disconnecting said customer utility load.

44. A method for effecting the connection status of a customer utility load as in claim 41, further comprising the step of remotely setting a connection element associated with said utility meter to either disconnected or connected status.

45. A method for effecting the connection status of a customer utility load as in claim 44, wherein said step of remotely setting a connection element associated with said utility meter corresponds to physically connecting said customer utility load.

46. A method for effecting the connection status of a customer utility load as in claim 44, wherein said step of remotely setting a connection element associated with said utility meter corresponds to physically disconnecting said customer utility load.

47. A method for effecting the connection status of a customer utility load as in claim 44, wherein said customer utility load corresponds to the distribution of electrical energy to a predetermined location.

48. A method for effecting the connection status of a

customer utility load as in claim 41, further comprising a step of periodically performing additional remote reads of said utility meter to verify the connection status of and
5 to ensure proper operation of said utility meter.

49. A method for effecting the connection status of a customer utility meter as in claim 41, wherein a user of said web-based application inputs a threshold amount of utility consumption and wherein said step of transmitting a
5 connection signal occurs when the customer utility load usage exceeds said threshold amount of utility consumption.

50. A method for effecting the connection status of a customer utility load as in claim 49, wherein a usage alert is provided to the user as notification that said customer utility load usage has exceeded the established threshold
5 amount of utility consumption.

51. A method for effecting the connection status of a customer utility load as in claim 50, wherein said usage alert comprises an electronically mailed message (e-mail) expressing that said threshold amount of utility
5 consumption has been exceeded.

52. A method for effecting the connection status of a customer utility load as in claim 45, further comprising a process of rapidly performing a plurality of remote reads of said utility meter after remotely setting said
5 connection element to ensure proper operation of said customer utility load.

53. A method for effecting the connection status of a customer utility load as in claim 52, wherein said process of rapidly performing remote reads occurs after setting said connection element to connected status to ensure that
5 dangerously high amounts of electrical energy are not distributed to said customer utility load.

54. A method for effecting the connection status of a customer utility load as in claim 53, further comprising a step of setting said connection element to disconnected status if the amount of electrical energy distributed to
5 said customer utility load is beyond an established threshold of excessive energy consumption.

55. A method for remotely connecting a customer utility load via a web-based utility application, said method comprising the steps:

accepting a load connection request from a user of
5 said web-based utility application;

performing a first remote read of a utility meter associated with said customer utility load to verify disconnected status of said customer utility load;

10 transmitting a connection signal from a main control station to a communications device provided at said utility meter to signal toggling of a connection element to connected status;

15 performing a series of rapid remote reads to verify final connection status of said customer utility load and to monitor instantaneous energy consumption of said customer utility load; and

20 transmitting a disconnection signal from a main controller to a communications device provided at said utility meter to signal toggling of a connection element to disconnected status if said instantaneous energy consumption is above a predefined energy consumption threshold.

56. A method for remotely connecting a customer utility load via a web-based utility application as in claim 55, wherein said customer utility load corresponds to

the distribution of electrical energy to a predetermined
5 location.

57. A method for remotely connecting a customer utility load via a web-based utility application as in claim 56, wherein said predefined energy consumption threshold is established to provide sufficient protection
5 against potential voltage surges at said customer utility load.

58. A method for remotely connecting a customer utility load as in claim 56, further comprising a step of periodically performing additional remote reads of said utility meter to verify the connection status and operation
5 of said customer utility load.

59. A method for remotely connecting a customer utility load as in claim 56, wherein access to said web-based application is effected upon a user entering an identification element and a corresponding password
5 element.

60. A method for remotely connecting a customer utility load as in claim 58, further comprising the step of generating utility reports related to said customer utility load, wherein said utility reports are generated at least
5 once a day, and wherein said utility reports are based on information collected at said step of periodically performing additional remote reads of said utility meter.